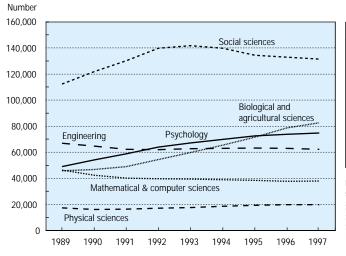
**Education of Scientists and Engineers** 

Figure 15. Bachelor's degrees awarded in major science and engineering fields

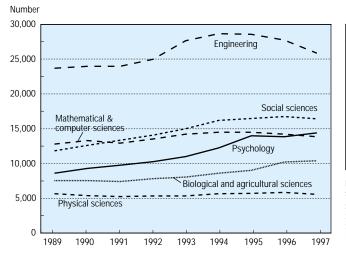


| Field                                | 1989      | 1997      |  |
|--------------------------------------|-----------|-----------|--|
| All fields (S&E and non-S&E)         | 1,030,171 | 1,186,589 |  |
| Science and engineering, total       | 337,431   | 408,749   |  |
| Physical sciences                    | 17,329    | 19,730    |  |
| Mathematical and computer sciences   | 46,277    | 37,844    |  |
| Biological and agricultural sciences | 45,744    | 82,727    |  |
| Psychology                           | 48,954    | 74,734    |  |
| Social sciences                      | 112,180   | 131,408   |  |
| Engineering                          | 66,947    | 62,306    |  |
| Non-science and engineering, total   | 692,740   | 777,840   |  |

**NOTE:** Physical sciences include earth, atmospheric, and oceanographic sciences, as well as physics, astronomy, and chemistry.

SOURCES: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System Completions Survey; tabulations by National Science Foundation, Division of Science Resources Studies.

Figure 16. Master's degrees awarded in major science and engineering fields

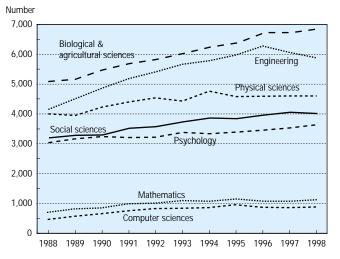


| Field                                | 1989    | 1997    |  |
|--------------------------------------|---------|---------|--|
| All fields (S&E and non-S&E)         | 311,050 | 420,954 |  |
| Science and engineering, total       | 70,333  | 86,697  |  |
| Physical sciences                    | 5,708   | 5,579   |  |
| Mathematical and computer sciences   | 12,829  | 13,897  |  |
| Biological and agricultural sciences | 7,557   | 10,443  |  |
| Psychology                           | 8,652   | 14,442  |  |
| Social sciences                      | 11,857  | 16,466  |  |
| Engineering                          | 23,735  | 25,870  |  |
| Non-science and engineering, total   | 240,717 | 334,257 |  |

**NOTE:** Physical sciences include earth, atmospheric, and oceanographic sciences, as well as physics, astronomy, and chemistry.

SOURCES: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System Completions Survey; tabulations by National Science Foundation, Division of Science Resources Studies.

Figure 17. Doctorates awarded in major science and engineering fields



| Field                                | 1988   | 1998   |
|--------------------------------------|--------|--------|
| All fields (S&E and non-S&E)         | 33,500 | 42,683 |
| Science and engineering, total       | 20,932 | 27,272 |
| Physical sciences                    | 4,045  | 4,639  |
| Mathematics                          | 749    | 1,177  |
| Computer sciences                    | 515    | 923    |
| Biological and agricultural sciences | 5,126  | 6,883  |
| Psychology                           | 3,074  | 3,681  |
| Social sciences                      | 3,236  | 4,050  |
| Engineering                          | 4,187  | 5,919  |
| Non-science and engineering, total   | 12,568 | 15,411 |

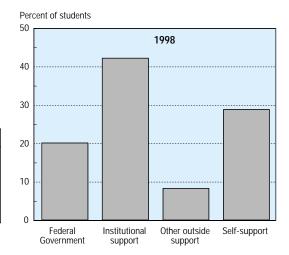
**NOTE:** Physical science includes earth, atmospheric, and oceanographic sciences, as well as physics, astronomy and chemistry.

**SOURCE:** National Science Foundation, Division of Science Resources Studies, Survey of Earned Doctorates.

Figure 18. Full-time science/engineering graduate students in all institutions, by source of primary support

## (Number of students)

| Source of pr | imary support | 1990    | 1993    | 1995    | 1997    | 1998    |
|--------------|---------------|---------|---------|---------|---------|---------|
| Total        |               | 265,399 | 294,030 | 287,223 | 280,708 | 279,517 |
| Federal Go   | vernment      | 52,501  | 60,393  | 59,408  | 56,840  | 56,148  |
| Institutiona | al support    | 115,864 | 120,899 | 120,417 | 119,267 | 118,815 |
| Other outs   | de support    | 24,765  | 24,971  | 23,926  | 23,081  | 24,169  |
| Self-suppo   | rt            | 72,269  | 87,767  | 83,502  | 81,520  | 80,385  |



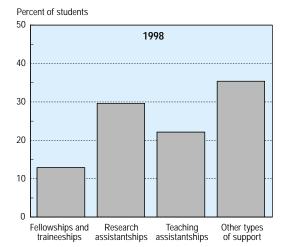
SOURCE: National Science Foundation, Division of Science Resources Studies, Survey of Graduate Students and Postdoctorates in Science and Engineering.

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Figure 19. Full-time science/engineering graduate students in all institutions, by type of primary support

## (Number of students)

| Type of primary support      | 1990    | 1993    | 1995    | 1997    | 1998    |
|------------------------------|---------|---------|---------|---------|---------|
| Total                        | 265,399 | 294,030 | 287,253 | 280,708 | 279,517 |
| Fellowships and traineeships | 33,586  | 37,438  | 37,251  | 36,134  | 36,392  |
| Research assistantships      | 77,342  | 86,202  | 85,347  | 83,143  | 83,183  |
| Teaching assistantships      | 62,597  | 64,792  | 63,164  | 62,309  | 62,127  |
| Other types of support       | 91,874  | 105,598 | 101,491 | 99,122  | 97,815  |



SOURCE: National Science Foundation, Division of Science Resources Studies, Survey of Graduate Students and Postdoctorates in Science and Engineering.

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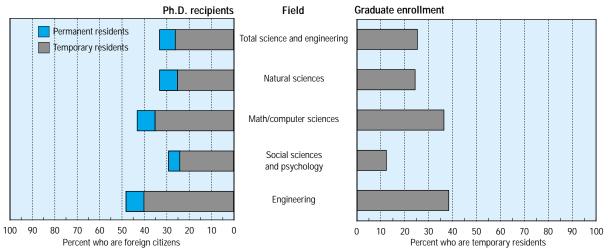


Figure 20. Foreign citizen representation in 1998 U.S. science and engineering graduate education

**NOTES:** Natural sciences here include physical, earth, atmospheric, oceanographic, biological, and agricultural sciences. Social sciences here include psychology, sociology, and other social sciences. Graduate student percentages are based on temporary residents only.

SOURCES: U.S. Department of Education, National Center for Education Statistics: Integrated Postsecondary Education Data System Completions Survey. National Science Foundation, Division of Science Resources Studies, Survey of Graduate Students and Postdoctorates in Science and Engineering

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